Revised: 10 Oct 2005

# HEARING LOSS (ICD9 38910; AR 40-501 Chap 4-8)

**AEROMEDICAL CONCERNS:** Adequate hearing is essential for communication in flight and also for rapid and accurate assessment of warning tones in the cockpit.

**WAIVERS:** Unrestricted waiver can be considered depending on amount of hearing loss and functional capability, provided a complete Audiological evaluation indicates no underlying pathology, and binaural speech recognition score is 84% or higher. Aircrew members with a recognition score of less than 84% may receive a waiver, but are generally handled on a case-by-case basis. Patients who are H4 profile will inevitably be disqualified.

**HEARING STANDARDS**

**Acceptable audiometric hearing levels for Army aircrew members and ATC**

| Class | 500 Hz | 1000 Hz | 2000 Hz | 3000 Hz | 4000 Hz | *6000 Hz* * |
|---|---|---|---|---|---|---|
| **1/1A** | 25 | 25 | 25 | 35 | 45 | *45* |
| **2/3/4** | 25 | 25 | 25 | 35 | 55 | *65* |

**Isolated hearing loss at 6000 Hz will not require full audiology work-up unless recommended by the local FS or audiologist (i.e., new onset, etc.) and is not considered disqualifying; however, 6000 Hz hearing measurements will be reported for AEDR data base and/or research and academic interest.*

**INFORMATION REQUIRED:**

- ❑ Complete initial audiological evaluation is required to include
  - ❑ pure-tone air conduction testing (and bone conduction if deemed necessary by audiologist or FS),
  - ❑ immittance audiometry to include:
    - ❑ tympanometry
    - ❑ acoustic reflex threshold testing
    - ❑ speech reception threshold testing
    - ❑ speech recognition (discrimination) testing in quiet under earphones. Speech recognition testing will be conducted both monaurally and binaurally utilizing the North Western University (NU6) word list material. Monaural testing will be conducted at a sensation level (SL) of 40 decibels (dB). Binaural recognition testing will be conducted at the patient's most comfortable listening level (MCL).

**ADDITIONAL INFORMATION, IF APPLICABLE:**

- ❑ Significant hearing loss may require ENT evaluation and/or an in-flight evaluation. An in-flight evaluation may be obtained through the US Aeromedical Consultation Service or may be conducted locally. The in-flight evaluation consists of doing a speech audiometry (using common aviation terms) while exposed to in-flight conditions of noise and normal flight conditions in the individual's primary aircraft (if this is a solo- aircraft, a dual-aircraft with similar noise level should be chosen). An individual with normal hearing should also be tested at the same time to verify the accuracy of testing and all microphones and headsets should be tested prior to testing. Note: A list of common aviation terms is available upon consultation with USAAMA.

**FOLLOW-UP:** An annual manual or microprocessor pure-tone evaluation at 500 Hz, 1000 Hz, 2000 Hz, 3000 Hz, 4000 Hz, and 6000 Hz in each ear is required. Automatic Bekesy type tracings are not acceptable. A shift of 20 db or greater in EITHER ear (from the baseline established with the current waiver) at 1000 Hz, 2000 Hz, 3000 Hz, and 4000 Hz will require a submitting a complete audiometric assessment to USAAMA, including air conduction, speech audiometry, and tympanometry.

**NOTE:** The current DOD Hearing Conservation Program (DA PAM 40-501) requires a follow-up hearing test or *medical* work-up for a shift of 15dB from baseline in either ear, or a 10 db average shift in both ears at the frequencies noted above. While local FS's should continue adhere to this DOD policy, submission of the complete *aeromedical* audiometric assessment is only required for a 20db shift in either ear or inability to hear adequately in the aircraft environment.

**TREATMENT:** Patients with conductive hearing loss may be helped by the use of hearing aids for ground duties in nonhazardous noise. The use of a hearing aid in flight is not recommended or authorized since the headsets have volume controls.

**DISCUSSION:** Patients with conductive hearing losses often hear better in a noisy background, such as in the air; whereas those with sensorineural hearing loss, tend to perform less accurately in the noisy flight environment. The factors to be taken into account in deciding an aeromedical disposition are the degree and type of loss, the need to hear accurately on the ground and in the air, the possible effects of fatigue, and the rate and degree of hearing loss progression.

Ref: DA PAM 40-501, 10 DEC 98